AMSAT News Service Weekly Bulletins
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SB SAT @ AMSAT $ANS-081.01
P3-D CHARGE REGULATORS ARRIVE

HR AMSAT NEWS SERVICE BULLETIN 081.01 FROM AMSAT HQ
SILVER SPRING, MD, MARCH 22, 1997
TO ALL RADIO AMATEURS BT
BID: $ANS-081.01

Phase 3-D team members Josef Szabo and Andras Szimler, both from the Amateur Radio Club Station HA5BME, accompanied Phase 3-D's flight Battery Charge Regulators (BCRs) from Hungary to Orlando late last week and successfully performed the all-important task of checkout and final integration of these units into the Phase 3-D satellite.

The Battery Charge Regulators (there are three of them in the Phase 3-D Spacecraft) are a critical part of Phase 3-D's power grid as they regulate both the onboard power coming from the solar panels as well as the ever-important charging functions of the main and auxiliary batteries in the satellite.

BCR funding and construction was a joint effort between AMSAT-DL and a Hungarian team under the leadership of Professor Dr. Andras (Bandi) Gschwindt, HA5WH, at the Technical University of Budapest.

Stay tuned to ANS for continuing reports on the final integration progress of AMSAT's Phase 3-D International Satellite.

[ANS thanks Werner Haas, DJ5KQ, Lou McFadin, W5DID and Keith Baker, KB1SF for the information that went into this bulletin item.]

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SB SAT @ AMSAT $ANS-081.02
QUALCOMM TAPS ANTONIO AS VP

HR AMSAT NEWS SERVICE BULLETIN 081.02 FROM AMSAT HQ
SILVER SPRING, MD, MARCH 22, 1997
TO ALL RADIO AMATEURS BT
BID: $ANS-081.02

Franklin P. Antonio becomes executive vice president and chief technology officer at Qualcomm of San Diego. Antonio, one of the founders of Qualcomm, will provide strategic technical guidance and engineering mentoring across all of Qualcomm's engineering programs. Franklin is a longtime friend and benefactor of AMSAT. He wrote and contributed all proceeds to AMSAT InstantTrack

[ANS thanks SpaceNews and Bill Tynan, W3XO, for this news.]

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SB SAT @ AMSAT $ANS-081.03
MIR CONTACT

HR AMSAT NEWS SERVICE BULLETIN 081.03 FROM AMSAT HQ
SILVER SPRING, MD, MARCH 22, 1997
TO ALL RADIO AMATEURS BT
BID: $ANS-081.03

Ham-astronaut Jerry Linenger, KC5HBR, aboard the Russian Mir space station, assured students at Booker T. Washington High School in Houston, Texas, this week that all aboard the space station are in good shape after a fire aboard Mir late last month. About three dozen students got to chat with Linenger March 17 and posed more than a dozen questions during the ten-minute contact. Linenger also discussed the effects of the fire on experiments and described the escape arrangements available to those aboard Mir.

On March 11, students at United South High School, Laredo, Texas, successfully spoke with Linenger via ham radio. Other Mir school QSOs are tentatively scheduled to happen between now and April 20, 1997.

Linenger will remain aboard Mir with Cosmonauts Vasily Tsibliev and Alexander Lazutkin until mid-May.

[ANS thanks the ARRL and Keith Baker, KB1SF, for this story.]

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SB SAT @ AMSAT $ANS-081.04
AMATEUR SATELLITES

HR AMSAT NEWS SERVICE BULLETIN 081.04 FROM AMSAT HQ
SILVER SPRING, MD, MARCH 22, 1997
TO ALL RADIO AMATEURS BT
BID: $ANS-081.04

Get ready to learn something NEW--from the EXCITING WORLD of Amateur Radio SATELLITES! Sign up for a fast-moving five-hour workshop on everything you need to get *on the birds.*

Become an expert operating through digital satellites, the *easy-sats,* low-orbit and high-altitude satellites such as AO-10, the upcoming Phase-3-D satellite, Russian satellites, and learn a bit about Russia's MIR space station and NASA's SAREX missions. you'll hear about needed equipment, and how to use FM, SSB, digital and CW modes, including dial-in access to a packet satellite without spending money for equipment, via a satellite gateway node. When you leave, you'll know:
*** Equipment Choices
       (everything including pre-amps, power amps)
*** Equipment Set-up
*** Antennas, Rotators and Feedlines
*** Software for Tracking
*** Operating Protocol and Hints
*** What Information is Available for You from AMSAT and ARRL
*** Frequencies--What Countries or Regions You Can Work

WHAT: Amateur Satellites -- Today and Tomorrow
      Be the Expert and start having Fun!

WHO: Ed Krome, K9EK, AMSAT expert from Columbus, IN, will be your instructor.

WHEN: Friday June 13, 2 PM - 7 PM. Arrive early to get materials.

WHERE: in association with the SeaPac Convention
       Seaside Convention Center - Seaside, Oregon

HOW: Space is limited; to pre-register write or call Rosalie White, WA1STO, at ARRL HQ (Tel 860-594-0237, fax 860-594-0259) before June 4. Price is $20 for ARRL members and $25 for non-members. You'll receive

free materials and 5 hours of practical information. Sponsored by ARRL and AMSAT. You can also purchase Satellite Experimenter's Handbook, from ARRL, beforehand, for $20 + $5 UPS shipping/handling.

This continuing education workshop is sponsored by AMSAT and ARRL Educational Activities Department. Those who take part all day will earn a certificate for 0.5 Continuing Education Units.

[ANS thanks Rosalie White, WA1STO, for this notice.]

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SB SAT @ AMSAT $ANS-081.05
OSCAR-11 REPORT

HR AMSAT NEWS SERVICE BULLETIN 081.05 FROM AMSAT HQ
SILVER SPRING, MD, MARCH 22, 1997
TO ALL RADIO AMATEURS BT
BID: $ANS-081.05

OSCAR-11 celebrated its 13th birthday on March 1st. and still going strong! Congratulations to the University of Surrey on a wonderful achievement. During the period 19-February to 18 March, good, steady signals have been received from the 145.826 MHz beacon. Good signals have also been received on 435 MHz, Saturday 15 March, 14:00 pass, when the satellite was being commanded by ground control.

Recent telemetry shows that the solar eclipses have reduced the internal temperatures by about eight degrees compared to the full sunlight condition. The battery voltage appears to be showing a tendency towards lower values, often around 13.5 volts. The spin period has varied from 300 to 382, but most of the time it is around 365 seconds.

The WOD survey of channels 1, 2, 3, 61, (magnetometers) dated 02-January-97 was transmitted until February 22nd. An ASCII file of this WOD is now on the WWW (in addition to the binary file), see below for URL. The WOD channels are now 40, 50, 52, 63, (Array voltage, battery charge, battery voltage, BCR status). This new WOD shows the effect of eclipses on the array voltage, and the battery voltage which varies from 14.0 down to 13.0 volts. The plots also show the effect of satellite spin, which modulates the current, and voltages. The BCR (battery charge regulator) switches from between unit A and unit B, several times during the WOD. A short file of this interesting WOD is also on the WWW site, and will be updated when the WOD is changed, and the maximum amount of data has been received.

Two AMSAT bulletins by Richard G3RWL have been uploaded. Topics have included OSCAR-11 status report, OSCAR-10 Keplers, and call for AMSAT-UK colloquium papers.

The operating schedule is unchanged.

ASCII status (210 seconds)
ASCII bulletin (60 seconds)
BINARY SEU (30 seconds)
ASCII TLM (90 seconds)
ASCII WOD (120 seconds)
ASCII bulletin (60 seconds)
BINARY ENG (30 seconds)

There are also additional status blocks after each bulletin is transmitted, and between ASCII TLM and WOD.

The mode-S beacon is ON, but telemetry indicates that it has partially failed, and delivering half power. Any reports of reception on 2401 MHz. would be most welcome. Please e-mail g3cwv@amsat.org.

The 435.035 MHz. beacon is normally OFF. However it can sometimes be heard when the satellite is being commanded by ground control, i.e. within range of Guildford, UK. Likely times are between 13:00 and 18:00 UTC, Fridays or at weekends. When the 435 beacon is transmitting, the 145 beacon is normally OFF. The data transmitted is mainly binary. Web site for OSCAR-11 data and some software - http://www.users.zetnet.co.uk/clivew/

[ANS thanks Clive Wallis, G3CWV, news item.]

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SB SAT @ AMSAT $ANS-081.06
10 GHz EME RECORD

HR AMSAT NEWS SERVICE BULLETIN 081.06 FROM AMSAT HQ
SILVER SPRING, MD, MARCH 22, 1997
TO ALL RADIO AMATEURS BT
BID: $ANS-081.06

On Wednesday, 12 March 1997, a new world record for EME on 10 GHz was set in a QSO between Joe DJ7FJ and Greg ZL1GSG. The two-way QSO took place at 08.30 UTC. DF7FJ operated from Schiltach in southwestern Germany and ZL1GSG from Awhitu Peninsula / Manukau Heads southwest of Auckland, New Zealand. The great circle distance between the QTH's is approximately 18340 km or just under 10000 nautical miles. DF7FJ and his team were using a 4.5m parabolic dish and a 50W traveling wave tube power amplifier, while ZL1GSG used a 3m dish and a similar PA.

"O" reports were exchanged both ways..

The new world record came after a series of unsuccessful attempts and one semi-successful attempt that saw ZL1GSG using a 1.8m dish from Muriwai, on NZ's West Coast northwest of Auckland. Prior to the successful QSO, a test run from Awhitu Peninsula confirmed on the weekend before that moon echoes were clearly audible from the receiver's speaker even a few meters away from ZL1GSG's van. Earlier echoes using the 1.8m dish had been very faint. The change to a larger dish had clearly made the difference.

On the night of the QSO, moon echoes were received by ZL1GSG well from about an hour before sked time. A last-minute technical problem, caused by a short in the cable that switched the waveguide TX/RX relay, put the whole project in jeopardy just minutes before the QSO began. However, Greg's policy of having a spare bit of next to everything provided a makeshift solution only a few minutes into the sked window, and contact was established almost immediately after ZL1GSG was QRV again. The signals from Germany were clearly audible as had been the moon echoes.

Congratulations to Greg ZL1GSG and Joe DJ7FJ from their New Zealand ground support team of the day: Bill ZL1TTH Tim ZL3VTV Ulrich ZL1DDL Thanks go to many amateurs who helped with the provision of equipment, time, and a QTH.

[ANS thanks Peter, G3PHO, Editor: RSGB Microwave Newsletter for this report.]

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SB SAT @ AMSAT $ANS-081.07
WEEKLY SATELLITE REPORT PT 1

HR AMSAT NEWS SERVICE BULLETIN 081.07 FROM AMSAT HQ
SILVER SPRING, MD, MARCH 22, 1997
TO ALL RADIO AMATEURS BT
BID: $ANS-081.07

MIR:
(New frequencies implemented 1 January 1997:
Uplink 145.2 MHz FM Downlink 145.8MHz FM)
Note, the above split is used for both packet and voice operation.

SAFEX, MIR 70cm Repeater
(Uplink 435.750MHz FM, Downlink 437.950MHz FM,
Subaudible tone 141.3 Hz)
The repeater operational and active..

RS-10:
(Uplink 145.865-145.905MHz CW/SSB, Downlink 29.36-29.4MHz CW/SSB)
Fred Andreas, ZR5FA, worked this bird most of the week using only 5W into a 1/4 wave and maintaining coms in this configuration for almost the entire pass. Unfortunately both RS-10 & RS-15 get very little traffic from his neck of the woods ,which is a pity considering how easy they are to work .
[ANS thanks Fred Andreas, ZR5FA, for this report.]

RS-12:
(Uplink 21.21-21.25MHz CW/SSB, Downlink 29.41-29.45MHz or
145.91-145.95Mhz CW/SSB)
The sat continues to provide excellent downlink signals in both T- and K-mode.
[ANS thanks Dick Montgomery, N3DV, for this update.]

RS-15
(Uplink 145.858-145.898MHz CW/SSB, Downlink 29.354-29.394MHz CW/SSB)
Fred Andreas, ZR5FA, has been following RS-15 "night" passes closely from ZS the past week and noticed the downlink signal on voice to be extremely strong lately (on par with RS-10) ,despite the apparent charging problem .There has been no noted activity on RS-15 from the African continent of late .
[ANS thanks Fred Andreas, ZR5FA, for this report.]

Be aware that RS-15 has battery charging problems. When the satellite is in the dark it has low output power..
[ANS thanks Geoff Perry for this report.]
(Hint: If SSB doesn't work for you, try CW. CW is very easy to hear on the downlink!)

RS-16
RS-16's 70 cm, 435.504 Mhz beacon on RS-16 operational.
The 10 meter beacon is not active at this time. Transponder is not operational.

FO-20
(Uplink 145.9-146.0MHz CW/LSB, Downlink 435.8-435.9MHz CW/USB)
Operating normally. Strong downlink signal.

KO-23
(Uplink 145.85, 145.9MHz FM, Downlink 435.175MHz FM,
9600 Baud FSK.)
KO-23 operating normally. Downloading data at a rate of 650 to 750 BPS.
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KO-25:
(Uplink 145.87MHz FM, Downlink 436.5MHz FM,
9600 Baud FSK.)
KO-25 operating normally. Downloading data at a rate of 660 to 720 BPS.
These data rates result in accumulations of 600K to 900K per pass
dependent on the duration the downlinking station is in the satellite
footprint.
[ANS thanks Jim Weisenberger, AA7KC, for his reports on
KO-25 and KO-23.]

AO-27:
(Uplink 145.85MHz FM, Downlink 436.8MHz FM)
Operating normally and lots of activity heard over
North America and Europe.
As of NOV 2, the AO-27 schedule is as follows:
  TEPR 4 = 16 = 8 Minutes in Length
  TEPR 5 = 52 = 18 Minutes in Length

  TX-3 is on Mid Power during TEPR 5.

This will have the TX turn on 8 Minutes after the satellite
enters the sun for a duration of 18 Minutes. This is a "back to US
Latitudes"operation.

N4USI, AO-27's current Command Station sends his thanks all for
their messages about the satellite turning on later than expected. He
reports he's deliberately letting the "turn on" time drift later
(for about 4-5 Minutes) so stations in the southern latitudes can also
have a chance to work AO-27. Every few months he will be letting the
turn on time drift like this to give more stations a chance to make
contacts thru the satellite.
[ANS thanks Michael Wyrick, N4USI, AO-27 Control-op, and Miguel A.
Menendez, EA1BCU, for this update.]

FO-29
Voice/CW
(Uplink 145.9-146.0MHz CW/LSB, Downlink 435.8-435.9MHz CW/USB)
Digital
(Uplink 145.85, 145.87, 145.910 MHz FM, Downlink 435.910 MHz FM 9600
baud BPSK)
FO-29 is in Analog mode at the current time.
The latest FO-29 Schedule can be found at.
http://www.kt.rim.or.jp/~jr1nvu/eindex.html
03/21/97 00:00 utc JD 1200 bps PSK
03/28/97 10:45 utc Digi-Talker
04/01/97 00:30 utc JD 9600 bps FSK

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SB SAT @ AMSAT $ANS-081.08
WEEKLY SATELLITE REPORT PT 2

HR AMSAT NEWS SERVICE BULLETIN 081.08 FROM AMSAT HQ
SILVER SPRING, MD, MARCH 22, 1997
TO ALL RADIO AMATEURS BT
BID: $ANS-081.08

AO-10:
(Uplink 435.030-435.18MHz CW/LSB, Downlink 145.975-145.825MHz
CW/USB)
AO-10
Participants in the Amsat-UK Central England VHF Net reported good results
on AO-10. Malcom G7NFO had worked some interesting "DX" including TR8CA,
PP8KWA,ZS2BWB and PY0FF.

[ANS thanks John Heath, G7HIA, Net Controller, for this report.]

OSCAR-11
(Downlink 145.825MHz. FM, 1200 Baud PSK. Beacon 2401.500 MHz..)
During the period 19-February to 18 March, good, steady signals have been received from the 145.826 MHz. beacon. Good signals have also been received on 435 MHz., Saturday 15 March, 14:00 pass, when the satellite was being commanded by ground control.
[ANS thanks Clive Wallis, G3CWV, for this information.]

AMSAT-OSCAR-16 (PACSAT)
(Uplink 145.9, 145.92, 145.94, 145.86MHz FM, Downlink 437.0513MHz SSB, 1200 Baud PSK. Beacon 2401.1428 Mhz.)
PACSAT (AO-16)
Russ Platt WJ9F, AO-16 Command Team , reports the digipeater on AO-16 has been on for the last couple of months. In regards to the 2.4 GHz transmitter, it does continue to work although WJ9F has not been leaving it on for an entire orbit due to its high current load on the 10 v bus. The battery charging scheme on the micros is managed during sunlight by adjusting the RCPSK transmitter power up or down to charge and not overcharge the batteries since we have no way to turn the solar cells off. The S-band transmitter does not have the ability to vary its output so it is a high current draw throughout the orbit. In the past during Experimenters Days when we have turned on the S-Band transmitter I had to scale back the output of the RCPSK transmitter to levels that were difficult to receive and even with these low levels the onboard software will still turn off the S-band TX if the Battery voltage drops too low, which it did. I guess that's why we called them Experimenter's Days! In the future I do plan to continue to turn on the S-band TX as power allows. I hope this answers your questions.
[ANS thanks Russ Platt WJ9F, AO-16 Command Team for this report.]

AO-16 Data/Telemetry ON-LINE
uptime is 917/06:33:41. Time is Sun Mar 23 11:57:01 1997
Total Array C= 0.317 Bat Ch Cur=-0.070 Ifb= 0.079 I+10V= 0.319
TX:010C BCR:80 PWRC:5AE BT:3C WC:25 EDAC:EC

WOD Dump of Bus/Power Channels 10,13,1E,22,2D,33
Will dump for 24 hours / AO-16 Command Team <WJ9F>
Graphic information about WOD/Telemetry values can find it in:
http://www.arrakis.es/~ea1bcu/ao16.htm
[ANS thanks Miguel A. Menendez, EA1BCU, for this report.]

DO-17(DOVE)
(Downlink 145.825MHz FM, 1200 Baud AFSK.
Beacon 2401.220 MHz.)
DOVE is transmitting on 2M and on S-band 2401.220 MHz.
The command team is keeping the S-band transmitter on as a test signal for those working on getting S receive equipment going.
The S transmitter is running about .8W to a whip that sticks out the top of the satellite near one edge. In the northern hemisphere the whip is pointed away from the earth, it's toward the earth in the southern hemisphere. It is quite loud with a typical satellite S-band receive setup, but in the northern hemisphere it will fade as much as 20 dB with rotation of the satellite. Doppler of course is large, approximately 100 KHz during a pass.
[ANS thanks Jim white, WD0E, DO-17 Command Team, for this news.]

WEBERSAT (WO-18)
(Downlink 437.104MHz SSB, 1200 Baud PSK AX.25.)
Webersat (WO-18) is currently in MBL mode after last weeks system crash. The satellite appears to be in good condition broadcasting MBL telemetry.

BCRi316.43mA bplt 1.340C TxPw 0.231W 5 V 5.742V 8.5V10.008V
10V 14.036V
[ANS thanks Tommy Davis, IK3WVJ, for this report.]

LUSAT-OSCAR-19
(Uplink 145.84, 145.86, 145.88, 145.9 MHz FM, Downlink 437.1528 MHz SSB,
1200 Baud PSK AX.25.)
(LUSAT-LO-19)
uptime is 641/22:29:45. Time is Sun Mar 23 12:34:55 1997
Total Array C= 0.333 Bat Ch Cur= 0.030 Ifb= 0.020 I+10V= 0.201
TX:110 BCR:34 PWRC:133AA BT:55 WC: 0
<BEACON>
22 de Enero de 1997.
7 years ! Gracias a todos los amigos que lo hicieron posible.
Amsat - LU8DYF.
Graphic information about Telemetry values can find it in:
http://www.arrakis.es/~ea1bcu/lo19.htm
[ANS thanks Miguel A. Menendez, EA1BCU, for this report.]

IO-26 (ITAMSAT):
(Uplink 145.875, 145.9, 145.925, 145.95MHz FM, Downlink 435.822MHz SSB,
1200 Baud PSK.)
IO-26 controllers report that the spacecraft is now in IHT mode. The new
ROBOT software is under currently undergoing tests. The beacon reports
that the digipeater is OFF and that the ROBOT is undergoing tests.
Controllers ask that groundstations please do not transmit on any of
the satellite's uplink frequencies for the time being.
[ANS thanks Daniele Piercarlo, IK2XRO, ITMSAT Command Station for this
report.]

[Please send your Satellite or News reports to ANS Editor B.J. Arts, WT0N,
via e-mail, at bjarts@uslink.net or to wt0n@amsat.org]

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B.J. Arts
WT0N in EN-37
bjarts@uslink.net
Hibbing,MN U.S.A.